Complete Syntax Itemization of the BDT Language

Section Number	Command Name	Operation Code	Arg1	Arg2	Arg3	Arg4	Description
2	BDTAdmin	201	Variable	Variable			Example: BDTAdmin(A , B) Meaning: Constructs a new BDTAdmin object with the specified name A and argument B.
	BDTArg	202	Variable				Example: BDTArg(A) Meaning: Constructs a new BDTArg object with the specified binary data A.
	BDTBinutil	203					Example: BDTBinutil() Meaning: Construct a new BDTBinutil object
	BDTConstants	204					Example: BDTConstants() Meaning: Construct a new BDTConstants object

BDTDebug 205 Ex
ample:

BD
TDebug()

Me
aning:

Co
nstruct a new BDTDebug object

BDTDump 206 Ex
ample:

BD
TDump()

Me
aning:

Co
nstruct a new BDTDump object

BDTException 207 Variable
Example:

BD
TException(A)

Me
aning:

Co
nstruct a new BDTException object with argument A

BDTGeometry 208 Variable Variable
Example:

BD
TGeometry(A, B)

Me
aning:

Co
nstructs a new BDTGeometry object with binary-coded A and B

BDTMaterial 209 Variable Variable
Example:

BD
TMaterial(A, B)

Me
aning:

Co

nstructs a new BDTMaterial object with binary-coded A and B

BDTMedia 210 Variable Variable
Example:
BD
TMedia(A, B)
Me
aning:
Co
nstructs a new BDTMedia object with binary-coded A and B

BDTNode 211 Variable Variable
Example:
BD
TNode(A, B)
Me
aning:
Co
nstructs a new BDTNode object with binary-coded A and B

BDTObject 212 Variable Variable
Example:
BD
TObject(A, B)
Me
aning:
Co
nstructs a new BDTObject object with binary-coded A and B

BDTObjectEngine 213 Ex
ample:
BD
TObjectEngine()
Me
aning:
Co
nstructs a new BDTObjectEngine object

BDTReader 214 Variable Variable
Example:
BD
TReader(A, B)
Me

aning:
Co
nstructs a new BDTReader object with binary-coded A and B

BDTRender 214 Ex
ample:
BD
TRender()
Me
aning:
Co
nstructs a new BDTReader object

BDTSceneLoader 215 Variable Variable
Example:
BD
TSceneLoader
Me
aning:
Co
nstructs a new BDTSceneLoader object with binary-coded A and B

BDTSound 216 Variable Variable
Example:
BD
TSound(A, B)
Me
aning:
Co
nstructs a new BDTSound object with binary-coded A and B

BDTTexture 217 Variable Variable
Example:
BD
TTexture(A, B)
Me
aning:
Co
nstructs a new BDTTexture object with binary-coded A and B

BDTType 218 Ex
ample:
BD

TType()

Me

aning:

Co

nstructs a new BDTType object

BDTVREngine 219 Ex

ample:

BD

TVREngine()

Me

aning:

Co

nstructs a new BDTVREngine object

BDTVRMLConverter 210

Example:

BD

TVRMLConverter()

Me

aning:

Co

nstructs a new BDTVRMLConverter object

BDTWizard 211 Ex

ample:

BD

TWizard()

Me

aning:

Co

nstructs a new BDTWizard object

BDTWriter 212

Example:

BD

TWriter()

Me

aning:

Co

nstructs a new BDTWriter object

Convert 213 Variable
Example:
Co
nvert(A)
Me
aning:
Co
nvert VRML file A to BDT file

ccw 214 Ex
ample:
cc
w()
Me
aning:
Ge
ts the handedness of this mesh

debug 215 Variable
Example:
de
bug(A)
Me
aning:
Pr
ints a debug string A if level is greater than the current class d
ebug level

flush 216 Ex
ample:
fl
ush()
Me
aning:
Fl
ushes the OutputStream and clears the BDTObject buffer

getBDTObjects 217 Ex
ample:
ge
tBDTObjects()
Me

aning:
Re
ads an array of BDT objects

getSceneRoot 218 Ex
ample:
ge
tSceneRoot()
Me
aning:
Ge
t the ID of the scenegraph root transform

imagePixels 219 Variable Variable
Example:
im
agePixels(A, B)
Me
aning:
Co
nvert an image to a matrix(A, B) of pixel values and store the im
age dimensions

imagePixels 220 Variable Variable
Example:
im
agePixels(A, B)
Me
aning:
Co
nvert an image to a matrix(A, B) of pixel values and store the im
age dimensions

invertMatrix 221 Variable Variable
Example:
in
vertMatrix(A, B)
Me
aing:
In
vert a 4x4 homogeneous transformation matrix(A, B)

isAvailable 222
Example:
is
Available()
Me
aning:
Ch
eck if more input from the stream is available

map 223 Ex
ample:
ma
p()
Me
aning:
Ge
t the texture coordinates for this mesh

loadFile 224 Variable
Example:
lo
adFile(A)
Me
aning:
Re
ad a binary file, A, over the network into a byte array

loadScene 225 Variable
Example:
lo
adScene(BDTObject())
Me
aning:
Co
nstruct a scenegraph in the specified rendering engine

mapI 226 Ex
ample:
ma
pI()
Me

aning:

Ge

t the texture coordinate indices of this mesh

material 227

Example:

ma

terial()

Me

aning:

Ge

t the material for this mesh

name 228

Ex

ample:

na

me()

Me

aning:

Ge

t the name of this object

normalizeVector 229 Constant Constant

Example:

no

rmalizeVector(A, B)

Me

aning:

No

rmalize a 3D vector(A, B)

normals 230

Example:

n

ormals()

Me

aning:

Ge

ts the normals of this mesh

normalsI 231

Example:

n

ormalsI()

aning: Me

ts the vertex indices of this mesh Ge

parse 232
ample: Ex

rse() pa

aning: Me

rses an array of binary arguments to object-specific fields Pa

pick 233
ample: Ex

ck(A, B) pi

aning: Me

rses an array of binary arguments to object-specific fields Pa

renderFrame 234
ample: Ex

nderFrame() re

aning: Me

TRender current scene to framebuffer BD

scale 235
ample: Ex

ale() sc

aning: Me

ts the scale of this node Ge

scaleOrientation 236
Example:

sc
aleOrientation()

Me
aning:

Ge
ts the scale orientation of this node

setAntialias 237
Example:

se
tAntialias()

Me
aing:

En
able antialiasing

setBackgroundImage 238 Variable
Example:

se
tBackgroundImage(A)

Me
aning:

Se
ts the background image A for the scene

setCameraLookAt 239 Constant Constant Co
nstant
Example:

se
tCameraLookAt(A, B, C)

Me
aning:

Se
t the view-direction vector(A, B, C) of the scene camera

setCameraPosition 240 Constant Constant
Constant
Example:

se
tCameraPosition(A, B, C)

Me
aning:

Se

t the position(A, B, C) of the scene camera

setCameraUp 241 Constant Constant Co
nstant Example:

se
tCameraUp(A, B, C)

Me
aning:

Se
t the view-up vector(A, B, C) of the scene camera

setFocalDistance 242 Consatnt
Example:

se
tFocalDistance(A)

Me
aning:

Se
t the focal distance A for the renderer

setFogActive 243
Ex
ample:

se
tFogActive()

Me
aning:

Tu
rns fog effects on

setMeshMaterial 244
Ex
ample:

se
tMeshMaterial()

Me
aning:

Se
t the material for each face of a mesh

setMeshTexture 245
Ex
ample:

se
tMeshTexture()

Me
aning:

Se
t the texture for a mesh

setMeshVertexCoord 246 Constant Constant
Constant Example:

se
tMeshVertexCoord(A, B, C)

Me
aning:

Se
t the position(A, B, C) of the mesh vertice

setRenderTarget 247 Variable
Example:

se
tRenderTarget(A)

Me
aning:

Se
t the target A to which this render's graphics will be drawn

setTransformMatrix 248 Constant Constant
Constant Example:

se
tTransformMatrix(A, B, C)

Me
aning:

Se
t the transformation matrix(A, B, C) associated with a particular
transform

sound 249
Ex
ample:

so
und()

Me
aning:

ge
t sound data

texture 250
Ex

ample:

te

xture()

Me

aning:

ge

t texture image data

transformVector 251 Constant Constant Co
nstant Example:

tr

ansformVector(A, B, C)

Me

aning:

Ap

ply a homogeneous transformation(A, B, C) to a 3D vector

translation 252
Example:

tr

anslation()

Me

aning:

Ge

ts the translation of this node

transparency 253
Ex
ample:

tr

ansparency()

Me

aning:

Ge

t the transparency of this material

type 254
Ex
ample:

ty

pe()

Me

aning:

Ge

t the type of this object

vertices 255
Example:

ve
rtices()

Me
aning:

Ge
ts the vertices of this mesh

verticesI 256
Example:

ve
rticesI()

Me
aning:

Ge
ts the vertex indices of this mesh

zeroMatrix 257
Example:

ze
roMatrix()

Me
aning:

Fi
ll a matrix with zeros

4 AddChild 404
Example:

Ad
dChild()

Me
aning:

Ad
d a child transform or mesh to a transform

AddMatrix 405 Constant Constant
Constant Example:

Ad
dMatrix(A, B, C)

Me
aning:

Ad
d 2 Matrices with dimensions of A, B, and C

argToBoolean 406 Constant
Example:

ar
gToBoolean(A)

Me
aning:

Co
nverts binary argument A to a boolean data of values

argToFloatArray 407 Constant Constant
Example:

ar
gToFloatArray(A, B)

Me
aning:

Co
nverts dimensions of A and B to an array fo floating-point values

argToFloatMatrix 408 Constant Constant
Example:

ar
gToFloatMatrix(A, B)

Me
aning:

Co
nverts dimensions of A and B to a matrix fo floating-point values

beginFrame 409
Example:

be
ginFrame()

Me
aning:

In
itialize the framebuffer and other render resoruces for drawing th
e next frame to the screen.

booleanToByteArray 410 Variable
Example:

booleanToByteArray(A)

Me

aning:

Co

nvert a boolean A to a byte array

byteArrayToFloat 411 Variable
Example:

by

teArrayToFloat(A)

Me

aning:

Co

nvert a byte array A into the corresponding floating-point number

children 412
Example:

ch

ildren()

Me

aning:

Ge

t the children of this mesh

command 413
Ex

ample:

co

mmand()

Me

aning:

Re

turns the command associated with this BDTAdmin object

concatenateMatrix 414 Variable Variable
Example:

co

ncatenateMatrix(A, B)

Me

aning:

Co

mpose A and B matrices

copyMatrix 415 Variable Variable

Example:

co

pyMatrix(A, B)

Me

aning:

Co

py entries of one matrix(A, B) into another

distance 416 Variable Variable

Example:

di

stance(A, B)

Me

aning:

Ca

lculates the distance between two points of A and B in 3D space

dotVectors 417 Variable Variable

Example:

do

tVectors(A, B)

Me

aning:

Ca

lculates the dot-product of two vectors of A and B

floatToByteArray 418 Variable

Example:

fl

oatToByteArray(A)

Me

aning:

Co

nverts a floating-point number A to a byte array

scaleMatrix 419 Constant Constant

Example:

sc

aleMatrix(A, B, C)

Me

aning:

Mu

ltiply each entry of a matrix(A, B, C) by a scaling factor

5 createAmbientLight 500
Example:
cr
eateAmbientLight()
Me
aning:
Cr
eate a new default ambient light with intensity 1.0f

createDirectionalLight 501
Example:
cr
eateDirectionalLight()
Me
aning:
Cr
eate a new default directional light pointing down the negative y
axis

createMaterial 502 Ex
ample:
cr
eateMaterial()
Me
aning:
Cr
eate a new material with Gouraud shading, grey diffuse color and z
ero transparency

createMesh 503
Example:
cr
eateMesh()
Me
aning:
Cr
eate a new empty mesh

createPointLight 504
Example:
cr
eatePointLight()

Me
aning:

Cr
eate a new omnidirectional point light source positioned at the or
igin

createTexture 505
Ex
ample:

cr
eateTexture()

Me
aning:

Cr
eate a new empty texture

createTransform() 506
Example:

cr
eateTransform()

Me
aning:

Cr
eate a new transform initialized to the unit transform

destroy 507
Ex
ample:

de
stroy()

Me
aning:

Re
lease unused render resources

diffuseColor 508
Ex
ample:

di
ffuseColor()

Me
aning:

Ge
t the diffuse color of this material

distance 509 Variable Variable

Example:

di
stance(A, B)

Me
aning:

Ca
lculates the distance between two points of A and B in 3D space

endFrame 510
Example:

en
dFrame()

Me
aning:

Dr
aw framebuffer to the screen using double-buffered graphics

generateNormals 511
Ex
ample:

ge
nerateNormals()

Me
aning:

Ge
nerate surface and vertex normals for a triangle mesh

rotxMatrix 512 Constant Constant
Example:

ro
txMatrix(A, B)

Me
aning:

Cr
eate a matrix(A, B) representing a 3D rotation about the x axis

rotyMatrix 513 Constant Constant
Example:

ro
tyMatrix(A, B)

Me
aning:

Cr
eate a matrix(A, B) representing a 3D rotation about the y axis

rotzMatrix	514	Constant	Constant

Example:

ro
tzMatrix(A, B)

Me
aning:

Cr
eate a matrix(A, B) representing a 3D rotation about the z axis